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The effect of soil properties on zinc lability and solubility in soils of Ethiopia – an isotopic dilution study

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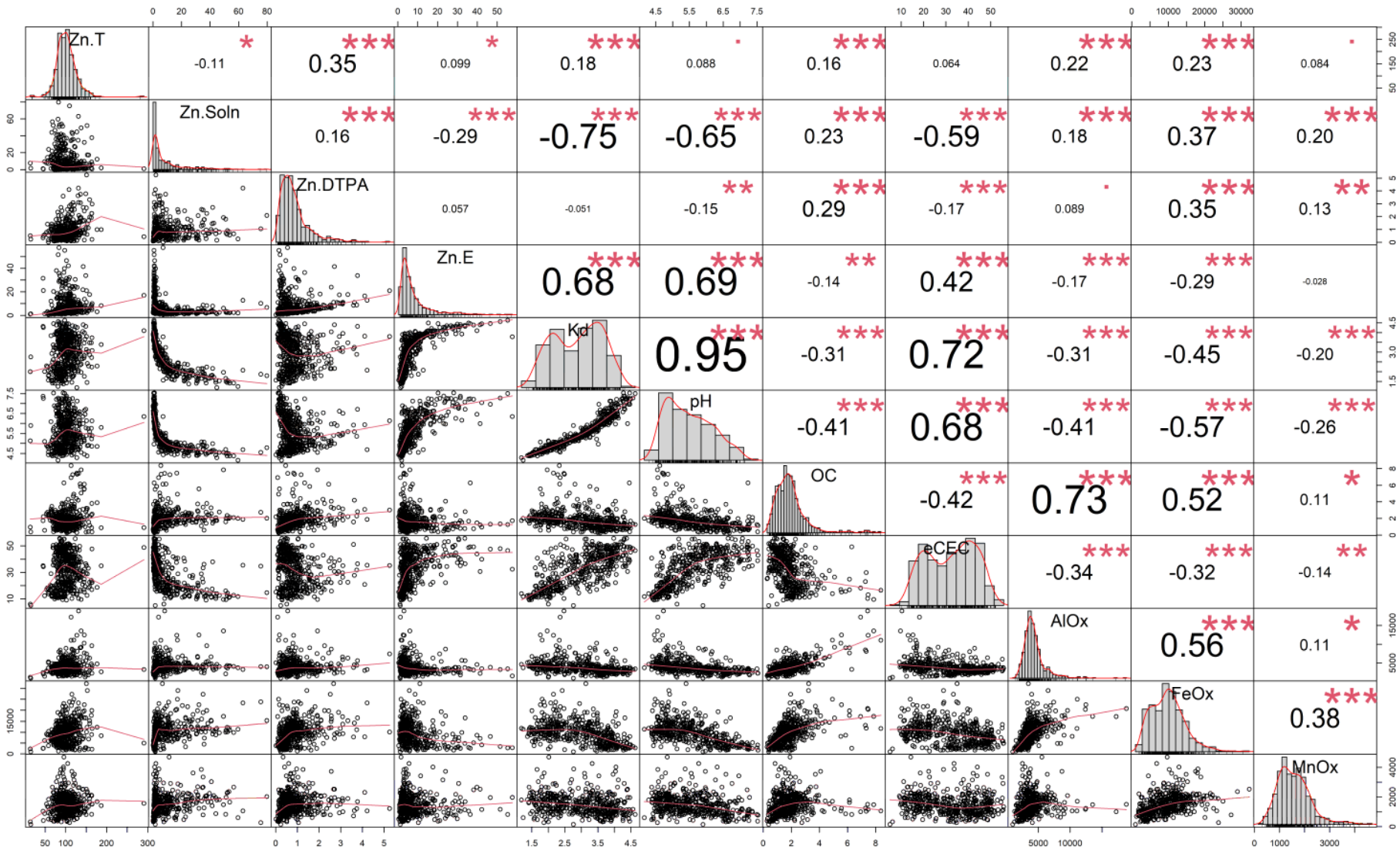
Supplementary Material

Table S1. ICP-MS (iCAP-Q) operating conditions for both multi element and isotope ratio

Parameter	Isotope analysis	Multi-elements analysis
Dwell time (s)	0.05	0.01
Number of sweeps	50	50
dead time correction (ns)	34.7	34.7
Detector dead time (ns)	35	55
Nebuliser flow rate (L min^{-1})	1.120	1.105
Extraction lens voltage (V)	-176.5	-111.3
Helium flow rate (L min^{-1})	4.4	4.4
Coolant gas flow (Ar; L min^{-1})	14	14
Auxiliary gas flow rate (L min^{-1})	0.8	0.8
Spray chamber temperature (°C)	2.7	2.7

Table S2. Correlation matrix among different soil variables



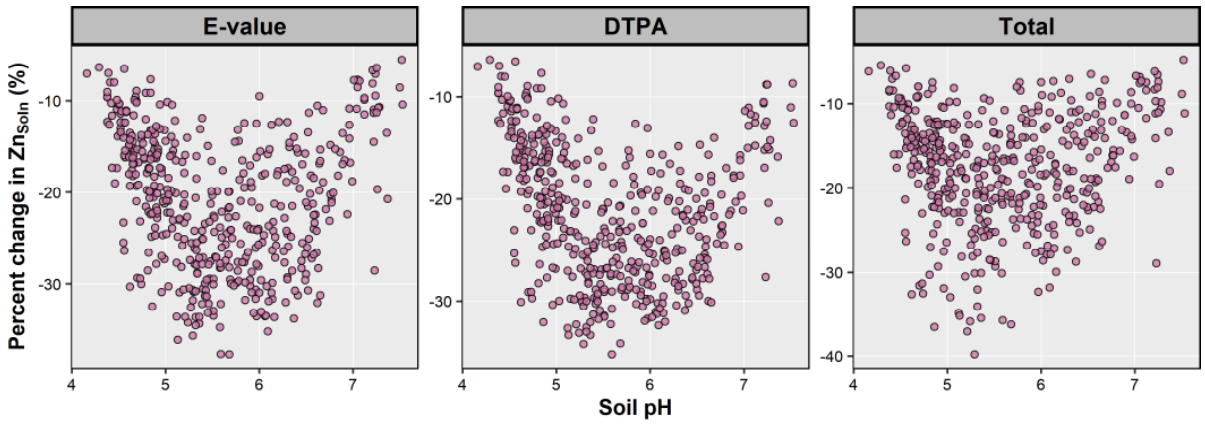


Figure S1. Relationship between soil pH and percent change in Zn_{Soln} predicted by WHAM7 when assuming only 36%, rather than 50%, of soil organic C is active. Values of Zn_{Soln} was predicted by WHAM7 using isotopically exchangeable Zn, DTPA-extractable Zn, and total Zn concentration in soil as inputs.

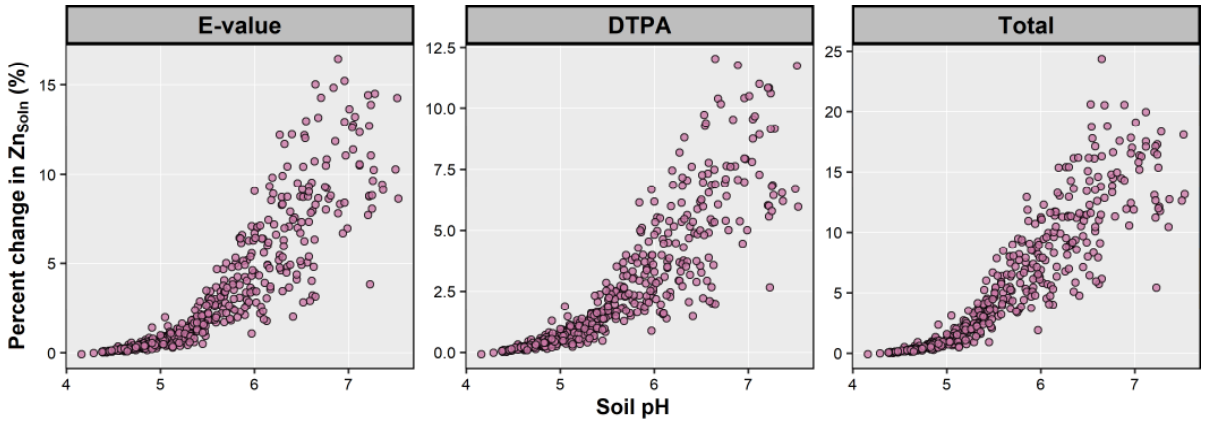


Figure S2. Relationship between soil pH and percent change in Zn concentration in soil solution, when assuming double the concentration of measured amorphous Fe oxide. Zinc concentration in soil solution was predicted using WHAM7 using isotopically exchangeable Zn, DTPA-extractable Zn, and total Zn.